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ABSTRACT

Initial results from the Brookline Early Education Project (BEEP) are presented. The project provided a comprehensive set of educational and diagnostic services to families and children from birth up until entry into kindergarten. Teacher ratings and independent observers recorded the classroom behavior of program participants as well as a group of comparison children. The analyses focused on identifying children who did not reach minimum standards in school social and mastery skills. Classroom observations indicated that fewer children who participated in the project were having difficulty. The results favored the BEEP participants, particularly in the area of social skills. These results were consistent regardless of the family background characteristics that were considered. On the teacher ratings there were no overall effects, but significant interactions between program participation and family background characteristics indicated that participating children generally had fewer problems than comparison children in those subgroups where problems would ordinarily be expected to be more prevalent. The study reported here is still in progress. Important future steps will be to look for program impact in other areas in order to obtain a more comprehensive picture of school competence, including health, parent involvement and developmental status. (Author/PN)

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EVALUATION OF A SCHOOL-BASED EARLY EDUCATION PROGRAM: RESULTS FROM THE BROOKLINE EARLY EDUCATION PROJECT

Terrence Tivnan and Donald E. Pierson

ABSTRACT

This paper summarizes and reports some initial results from the Brookline Early Education Project (BEEP). The project provided a comprehensive set of educational and diagnostic services to families and children from birth up until entry into kindergarten. Independent observers recorded the classroom behavior of program participants as well as a group of comparison children. Teacher ratings were also obtained. The analyses focused on identifying children who did not reach minimum standards in school social and mastery skills. On the classroom observations the results indicated that fewer children who participated in the project were having difficulty. The results were stronger in the area of social skills. These results were consistent regardless of the family background characteristics that were considered. On the teacher ratings there were no overall effects, but significant interactions between program participation and family background characteristics indicated that participating children generally had fewer problems than comparison children in those subgroups where problems would ordinarily be expected to be more prevalent. Additional analyses and follow-up of children through the second grade are currently underway.

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EVALUATION OF A SCHOOL-BASED EARLY EDUCATION PROGRAM

RESULTS FROM THE BROOKLINE EARLY EDUCATION PROJECT

Terrence Tivnan and Donald E. Pierson

The Brookline Early Education Project (BEEP) was initiated nearly a decade ago, at a time when the research knowledge on the effects of early education programs was relatively sparse. The initial planning for the project took place during a time when the enthusiasm and support for such projects was high. Much of this support stemmed from the broad base of basic research that had been carried out during the 1950's and 60's. This basic work generated interest in further understanding the role of early experiences in child development. But it also stimulated optimism for the potential benefits of parent and early childhood education programs.

In the early 1970's, Dr. Robert Sperber, the Superintendent of Schools in Brookline, Massachusetts, was struck by the fact that a disproportionate share of school funds were expended at the secondary school level rather than the primary grades, and there was no direct public school involvement at the preschool level. This pattern was present despite the growing evidence on the importance of the preschool years to later functioning in school.

BEEP was developed to study the benefits of providing comprehensive services to families throughout the preschool years of their children. The primary goal was to maximize the children's opportunities for success in school by forming coilaborative relationships among parents, the schools,

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and health care providers. The project's approach was to recruit a diverse pilot group of families and to offer each of them a package of educational and diagnostic services throughout the years from birth up to entry into kindergarten.

Funding was obtained from Carnegie Corporation of New York and The Robert Wood Johnson Foundation. The first families were enrolled in the project in February, 1973. Six major features of the project's operation should be emphasized.

1. Public-School Based. While the project was primarily funded through non-government sources, the program was initiated and administered through the public schools. This helped to make the project widely accepted in the communities it served. It made it easier to develop a program of services that would be related to the goals of the public schools. It also facilitated the evaluation efforts substantially.
2. Multidisciplinary collaboration. The project included educational, medical and social service components. Professionals involved included pediatricians, teachers, psychologists and social workers.
3. Heterogeneous participants. Consistent with the public-school orientation of the project, attempts were made to enroll families from all types of backgrounds. All families residing in Brookline were invited to enroll if they were expecting a child during the enrollment period in 1973 or 1974. To gain more ethnic diversity than would be possible in Brookline alone, ethnic minority families (Black and Hispanic) from adjoining areas of Boston were also eligible to join. Unlike many other projects, socio-economic criteria were

not used at all in determing membership. Any family was eligible providing they had no immediate plans to move out of the area.

4. Program continuity. The program was designed to provide services from the time a child was born until entry into kindergarten. The intention here was to eliminate possible shortcomings of starting too late or ending too soon during the preschool years.

5. Multiple outcome measures. A variety of procedures were adopted and developed to assess the project's comprehensive goal of enhancing a child's success in school. These included measures of physical development, cognitive skills and academic performance, and social and interpersonal skills.

6. Multiple analysis strategies. A number of complementary approaches have been taken in analyzing the impact of the project. An attempt has been made to combine the most effective quantitative and qualitative techniques in investigating possible program effects.

Project Services

The total package of program services involved periodic assessments or diagnostic services, parent education and education programs for children.

The assessment program consisted of frequent health and developmental examinations at designated intervals throughout the child's first five years. The aim was to ensure that any concerns received prompt and proper attention. Parents were encouraged to observe each exam and discuss their child's performance with the staff nurse, doctor, psychologist or social worker. Any necessary follow-up plans were coordinated with

the child's teacher, the family physician and any other agencies working with the family.

The parent education programs were designed to inform and increase the confidence of the parents by providing information about normal child development and by counseling about effective advocacy and child management techniques. The goal was to encourage parents to make their own decisions regarding their child. The professional staff members all had previous experience working with parents and represented a range of cultural and personal backgrounds. The involvement with parents took place during home visits, small-group meetings, parent-teacher conferences, guided classroom observations, and informal discussions at the drop-in center.

The children's programs were initiated on a regular basis at two years of age with weekly playgroup sessions that took place at the BEEP center. This program was continued as a daily prekindergarten program for three and four year olds. These prekindergarten classes were held at the Brookline elementary schools. Several classes were bilingual.

Project Evaluation

The comprehensive evaluation of BEEP involved looking at a wide variety of outcome measures. The results to be reported here represent only one aspect of the overall evaluation effort: information on the children's performances during kindergarten as assessed by their classroom teachers and a team of observers who were hired to assist in the project evaluation. Three main questions will be addressed.

1. Did the children who participated in BEEP show advantages over a comparison group of children on classroom observations of behaviors during the fall and spring of kindergarten?
2. Did the BEEP participants show advantages over the comparison group on teacher ratings of kindergarten skills in fall and spring of the kindergarten year?
3. Did BEEP have a differential impact for certain subgroups of children on either the observations or teacher ratings?

METHOD

Subjects

Participants in the BEEP program were 132 children, born in 1973 and 1974, who had been enrolled in BEEP from infancy to kindergarten. Enrollment was open to all residents of Brookline and to ethnic minority families from adjacent areas of Boston. Participants were recruited through the schools, health and social-service agencies, and neighborhood networks designed to locate and attract families who would not ordinarily seek out an early education program. All participants in BEEP had the option of attending the public schools in Brookline either as residents or through METCO, a state-funded voluntary desegregation program.

The comparison group for this study consisted of 366 children born from 1970 through 1974, who were enrolled in Brookline public school kindergartens and whose parents agreed to allow the children to be observed and tested. The family background characteristics for this group were quite similar to those of the BEEP families. There was a slightly

higher proportion of BEEP families whose first language was not English and a higher proportion of single-parent families as well. The education levels of the two groups were quite similar overall.

Instruments

The observations of children's classroom behavior were carried out with the Executive Skill Profile developed by Martha Bronson. The instrument provides a way of recording a child's performance in planning and organizing work, interacting with others, and carrying out social interactions and mastery tasks successfully. Trained observers, who were not part of the BEEP program staff, followed and recorded the behavior of each child for six 10-minute periods in the fall and again in the spring of kindergarten. Observations were conducted during the usual range of kindergarten activities, including puzzles, art activities, reading readiness, etc. Observers were not informed of the specific purposes of the study, nor were they aware of the children's membership in the participant or comparison groups.

The observations covered three categories of behavior: Mastery, Social and Use of Time.

The Mastery category included variables related to a child's success in planning and carrying out mastery tasks: Resistance to Distraction, Use of Appropriate Task-Attack Strategies, and Successful Completion of Tasks.

The Social category included measures of interpersonal relations: Cooperative Interactions of Peers, Successfully Influencing Others, Use of Effective Cooperative Strategies, and Use of Language rather than physical force to persuade and gain attention of others.

The Use of Time category consisted of variables related to involvement in the classroom: Time spent in social activities, Time spent in mastery activities, Time spent without any focused activity, and Total number of social acts.

Criteria for determining whether a child had a problem in any of the areas were derived from clinical analysis of data on children who obviously manifested school adjustment problems according to school records. The cut-off points were always at least one standard deviation below the group mean score for a category.

A Teacher Rating Scale was developed in 1975 by a group of evaluation consultants and Brookline School staff. Based on a criterion-referenced approach, the scale assessed skills regarded by Brookline teachers as necessary for successful functioning in kindergarten. The scale included 15 items covering social, mastery, motor, reading readiness and number skills. Each item described a series of specific behaviors; teachers were instructed to select the response that best described the child's current level of functioning. The mastery area included assessments of persistence, use of time, following directions and classroom routines. Social areas covered leadership, peer interaction, language and classroom participation. The motor area included dressing and tying shoes, catching a ball, skipping, use of pencil and scissors.

The determination of low scores reflecting less than adequate performance was based on clinical judgments by teachers and child development experts about what skills were required for successful functioning in fall and spring of kindergarten. To give an example, it was felt that kindergarten children should be able to engage in simple dialogue

with peers; thus a teacher's indication that a child "listens but does not engage in conversation,"" makes only direct responses to questions," or "uses language to influence other's behaviors," was considered a low score. A check of the frequency distributions revealed that no more than 10 to 15 percent were flagged in a particular area. Since a concern in only one area might not indicate a serious educational problem, an overall rating was also obtained. Consistent with teacher and administrator perceptions, results here indicated 5 to 10 percent of the overall ratings were serious problems.

Analyses of these data were carried out by comparing the proportions of children in BEEP and in the comparison group who were flagged as showing serious problems on the observations and the teacher ratings. We compared the simple proportions, and we also used logistic regression procedures in order to take the family background characteristics into account. Our analysis took the form of comparing the odds ratios. We looked at the odds that a child in the BEEP group would have a problem, and then we compared that to the odds that a child in the comparison group would have a problem. We could also take into account such other factors as birth order, first home language, mother's age at birth of child, mother's and father's education, and age of child at entry to kindergarten.

Results

On the classroom observation scores, there were significant differences favoring the BEEP participants, particularly in the area of social skills and in use of time. These differences were present in both the

fall and the spring. No major changes in the pattern of differences occurred when the background variables were considered. The odds ratios were quite consistent, whether or not any background variables were included in the analyses. In addition, a search for possible interactions of program effects and background variables revealed little evidence of a differential impact for different subgroups of children. The advantages for BEEP participants were consistent regardless of demographic factors.

The results for the teacher ratings of children's classroom behavior were quite different than the results from the classroom observations. In terms of overall effects, there were only two significant results: one favoring BEEP children in ratings of reading readiness (in the fall only); one favoring the comparison group in the area of mastery skills (in the spring only). In all other areas of the teacher ratings there were no overall differences in either the fall or the spring. There were also many more significant relationships of the teacher ratings and the family background variables. More importantly, a number of significant interactions were found between program participation and demographic characteristics. These interaction effects are an indcation that, while there were few consistent overall effects, there may be subgroups of children who may be benefitting from the program in some areas. The results here were not completely consistent, but the predominant pattern was for there to be advantages for BEEP children in those subgroups traditionally associated with being at-risk for school problems, while there were no differences or slight differences favoring

the comparison group among groups of children where the overall incidence of difficulties was much lower. For example, among families where the father had less than a high school education, the teacher ratines (particularly in the fall) showed advantages for the BEEP participants. Among the remaining families, however, there were typically no differences or slight advantages for the comparison groups. This pattern frequently yielded a finding of no significant differences overall.

Conclusions

Putting together the results from the two measures indicates that the program was successful in reaching its major goal of enhancing the proportion of children who experience success at entry into school. The fact that the participating children were distributed over more than 20 classrooms and over two years of kindergarten enrollment, and the comparison children were spread over more than 40 classrooms and five years of enrollment helps to discount the possibility of spurious individual school, teacher or cohort effects.

The observation instrument was designed particularly to be sensitive to the program's efforts to influence cognitive learning and interpersonal behaviors. The teacher rating instrument was developed to assess the particular goals of the Brookline kindergarten program. The finding that most children from both groups met the criteria for adequate functioning according to the teacher ratings is probably a function of the expectations of the teachers rather than an inconsistency with the observation findings. Kindergarten is regarded as a time for adjustment to school and few serious problems are detected. The referral rate for special education services in Brookline is less than 1% at kindergarten and rises to 15% by second grade.

The heterogeneous characteristics of children who showed benefits is important in considering policy implications. It means that early education, in principle, should not be limited just to handicapped children or economically deprived. It is also important to note that benefits of such programs are likely to be detected only if the outcome measures are consistent with the goals of the project and are appropriate to the context of the later school setting.

The study reported here is still in progress. Some important future steps will be to look for program impact in other areas in order to obtain an even more comprehensive picture of school competence, including health, parent involvement and developmental status. Also, the intensity of program participation needs to be related to the effects so that future programs can build on the most cost-effective elements of this and other projects. Eventually we will follow the children through the second grade to determine the possible continuing effects of the early program.